

Weapons Activities

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Weapons Activities

Proposed Appropriation Language

For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other incidental expenses necessary for atomic energy defense weapons activities in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion; the purchase of not to exceed [six] 19 passenger motor vehicles, for replacement only, including not to exceed two buses; [\$6,272,511,000], \$6,568,453,000 to remain available until expended.

Explanation of Change

Changes from the language proposed in FY 2004 consist of a change to the number of proposed motor vehicles and funding amounts.

Weapons Activities

Funding Profile by Subprogram

(dollars in thousands)

	FY 2003 Comparable Appropriation	FY 2004 Original Appropriation	FY 2004 Adjustments ^a	FY 2004 Comparable Appropriation	FY 2005 Request
Weapons Activities					
Directed Stockpile Work	1,259,136	1,340,286	- 13,630	1,326,656	1,406,435
Science Campaign	260,867	250,548	+ 23,300	273,848	300,962
Engineering Campaign	270,502	344,387	- 79,472	264,915	242,984
Inertial Confinement Fusion and High Yield Campaign ..	499,230	517,269	- 3,018	514,251	492,034
Advanced Simulation and Computing Campaign	674,453	725,626	- 4,250	721,376	741,260
Pit Manufacturing and Certification Campaign	261,807	298,528	- 1,738	296,790	336,473
Readiness Campaign	270,147	247,097	+ 81,819	328,916	280,127
Readiness in Technical Base and Facilities	1,480,872	1,664,235	- 123,590	1,540,645	1,474,454
Secure Transportation Asset	168,548	162,400	- 948	161,452	201,300
Nuclear Weapons Incident Response	81,114	0	+ 89,167	89,167	99,209
Facilities and Infrastructure Recapitalization Program ...	235,474	240,123	- 1,368	238,755	316,224
Safeguards & Security	558,161	585,750	- 3,280	582,470	706,991
Subtotal,					
Weapons Activities	6,020,311	6,376,249	- 37,008	6,339,241	6,598,453
Use of Prior Year Balances	- 29,981	- 74,753	- 2,000	- 76,753	0
Security Charge for Reimbursable Work	- 28,985	- 28,985	+ 0	- 28,985	- 30,000
Total, Weapons Activities	5,961,345	6,272,511	- 39,008	6,233,503	6,568,453

Public Law Authorization:

P.L. 108-136, National Defense Authorization Act, FY 2004

P.L. 108-137, Energy and Water Development Appropriations Act, FY 2004

^a Reflects distribution of the rescission of \$37,007,815 from the Consolidated (Omnibus) Appropriations Bill for FY 2004 and comparability adjustments. Reference the "FY 2004 Appropriation" table for additional details on these adjustments.

FYNSP Schedule

(dollars in thousands)

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FYNSP Total
Weapons Activities						
Directed Stockpile Work	1,406,435	1,521,175	1,648,144	1,778,400	1,812,398	8,166,552
Science Campaign	300,962	301,382	307,784	328,330	341,028	1,579,486
Engineering Campaign	242,984	268,207	226,357	284,020	236,838	1,258,406
Inertial Confinement Fusion and High Yield Campaign.....	492,034	521,319	535,070	437,069	440,557	2,426,049
Advanced Simulation and Computing Campaign.....	741,260	781,509	825,705	834,160	848,359	4,030,993
Pit Manufacturing and Certification Campaign.....	336,473	323,508	314,180	154,579	158,168	1,286,908
Readiness Campaign.....	280,127	330,801	307,383	357,027	376,460	1,651,798
Readiness in Technical Base and Facilities	1,474,454	1,600,185	1,753,217	1,839,266	1,915,754	8,582,876
Secure Transportation Asset	201,300	185,000	185,971	190,014	195,000	957,285
Nuclear Weapons Incident Response.....	99,209	100,136	100,657	98,331	100,609	498,942
Facilities and Infrastructure Recapitalization Program	316,224	372,707	425,848	472,114	475,531	2,062,424
Safeguards & Security.....	706,991	607,071	618,684	613,690	626,298	3,172,734
Subtotal, Weapons Activities	6,598,453	6,913,000	7,249,000	7,387,000	7,527,000	35,674,453
Security Charge for Reimbursable Work.....	- 30,000	- 32,000	- 33,000	- 34,000	- 35,000	- 164,000
Total, Weapons Activities.....	6,568,453	6,881,000	7,216,000	7,353,000	7,492,000	35,510,453

FY 2003 Execution

(dollars in thousands)

	FY 2003 Approp	Use of PY Bal/ General Reduction	Rescis- sion	Supple- mental	Reprogram- ming	Comp Adjust	Current FY 2003 Comparable
Directed Stockpile Work	1,234,467	- 27,988	- 7,841	0	- 5,983	66,481	1,259,136
Science Campaign.....	255,468	- 5,791	- 1,623	0	- 4,043	16,856	260,867
Engineering Campaign	233,697	- 5,297	- 1,485	0	- 1,314	44,901	270,502
Inertial Confinement Fusion and High Yield Campaign	504,293	- 11,433	- 3,204	0	8,530	1,044	499,230
Advanced Simulation and Computing Campaign	704,335	- 15,969	- 4,472	0	- 9,441	0	674,453
Pit Manufacturing and Certification Campaign	222,000	- 5,033	- 1,410	0	4,770	41,480	261,807
Readiness Campaign	213,752	- 4,847	- 1,358	0	13,387	49,213	270,147
Readiness in Technical Base and Facilities	1,832,222	- 41,541	- 11,638	0	24,075	- 322,246	1,480,872
Secure Transportation Asset	152,989	- 3,469	- 972	20,000	0	0	168,548
Nuclear Weapons Incident Response.....	0	0	0	0	0	81,114	81,114
Facilities and Infra Recapitalization Program.....	242,512	- 5,498	- 1,540	0	0	0	235,474
Safeguards & Security	526,254	- 11,934	- 3,159	47,000	0	0	558,161
Subtotal, Weapons Activities.....	6,121,989	- 138,800	- 38,702	67,000	29,981	- 21,157	6,020,311
Use of Prior Year Balances	0	-29,981	0	0	0	0	-29,981
Security Charge for Reimbursable Work	-28,985	0	0	0	0	0	-28,985
Subtotal, Weapons Activities	6,093,004	-168,781	-38,702	67,000	29,981	-21,157	5,961,345

FY 2004 Appropriation

(dollars in thousands)

	FY 2004 Enacted Approp	Use of Prior Year Balance	Pending Rescis- sion	Supple- mental	Reprogram- ming/Transfe rs	Comp Adjustments	Current FY 2004 Comp
Directed Stockpile Work	1,340,286	0	- 7,835	0	0	-5,795	1,326,656
Science Campaign.....	250,548	0	- 1,444	0	0	24,744	273,848
Engineering Campaign	344,387	0	- 2,011	0	0	- 77,461	264,915
Inertial Confinement Fusion and High Yield Campaign	517,269	0	- 3,018	0	0	0	514,251
Advanced Simulation and Computing Campaign	725,626	0	- 4,250	0	0	0	721,376
Pit Manufacturing and Certification Campaign	298,528	0	- 1,738	0	0	0	296,790
Readiness Campaign	247,097	0	- 1,437	0	0	83,256	328,916
Readiness in Technical Base and Facilities	1,664,235	0	- 9,679	0	0	- 113,911	1,540,645
Secure Transportation Asset	182,400	-20,000	-948	0	0	0	161,452
Nuclear Weapons Incident Response.....	0	0	0	0	0	89,167	89,167
Facilities and Infra Recapitalization Program.....	240,123	0	- 1,368	0	0	0	238,755
Safeguards & Security	585,750	0	- 3,280	0	0	0	582,470
Subtotal, Weapons Activities.....	6,396,249	- 20,000	- 37,008	0	0	0	6,339,241
Use of prior year balances	0	- 74,753	0	0	-2,000	0	-76,753
Security Charge for Reimbursable Work	-28,985	0	0	0	0	0	-28,985
Total, Weapons Activities.....	6,367,264	-94,753	-37,008	0	-2,000	0	6,233,503

Mission

The Weapons Activities mission is to ensure that our nuclear weapons continue to serve their essential deterrence role by maintaining and enhancing the safety, security, and reliability of the U.S. nuclear weapons stockpile.

Benefits

The Weapons Activities program supports the NNSA and DOE mission by maintaining a robust infrastructure of people, programs, and facilities to provide specialized scientific and technical capability for stewardship of the nuclear weapon stockpile.

Strategic and Program Goals

The Weapons Activities program has one program goal which contributes to General Goal 1 in the “goal cascade”:

General Goal 1, Nuclear Weapons Stewardship: Ensure that our nuclear weapons continue to serve their essential deterrence role by maintaining and enhancing the safety, security and reliability of the U.S. Nuclear Stockpile.

Contribution to General Goal 1

Within the Weapons Activities appropriation, thirteen programs each make unique contributions to General Goal 1 as follows:

The Directed Stockpile Work program (Program Goal 01.27.00.00) contributes to this goal by ensuring that the nuclear warheads in the U.S. nuclear stockpile are safe, secure, and reliable. This goal is achieved by: (1) developing solutions to extend weapon life, correcting potential technical issues; (2) conducting scheduled warhead maintenance; (3) dismantling warheads retired from the stockpile; (4) conducting evaluations to certify warhead reliability and to detect/predict potential weapon fixes, mainly from aging; (5) producing and refurbishing warheads to install the life extension solutions and other fixes; and (6) researching advanced concepts. The Directed Stockpile Work is planned in partnership with the Department of Defense.

The Science Campaign program (Program Goal 01.28.00.00) contributes to this goal by developing the knowledge, tools and methods needed to assess with confidence the performance of the nuclear explosive package without further underground testing. This is achieved by developing predictive capabilities for nuclear primary and secondary performance, understanding material properties, constructing and maintaining essential scientific facilities/capabilities, and maintaining the readiness of the NNSA to conduct nuclear testing if directed by the President.

The Engineering Campaign program (Program Goal 01.29.00.00) contributes to this goal by providing validated engineering sciences and engineering modeling and simulation tools for design, qualification, assessment, and certification; improved surety technologies, improved radiation hardened design and modeling capabilities; improved microsystems and microtechnologies; and engineering solutions to identify aging problems based on a predictive understanding of aging phenomenon of all materials.

The Inertial Confinement Fusion Ignition and High Yield program (Program Goal 01.30.00.00) contributes to

this goal by developing laboratory capabilities to create and measure extreme conditions of temperature, pressure, and radiation approaching those in a nuclear explosion and by conducting weapons related research in these environments. This capability is required to support assessments and certification of the nation's nuclear weapons stockpile. Additionally, the ICF campaign is pursuing the goal of achieving controlled fusion ignition in the laboratory. If achieved, this will provide further capabilities to understand important issues regarding boost, burn and nuclear effects that cannot be achieved otherwise.

The Advanced Simulation and Computing program (Program Goal 01.31.00.00) contributes to this goal by providing leading edge, high-end simulation capabilities used in all weapons assessment and certifications.

The Pit Manufacturing and Certification program (Program Goal 01.32.00.00) contributes to this goal by restoring the capability and some limited capacity to manufacture pits of all types required by the nuclear weapons stockpile including planning the design and construction of a Modern Pit Facility (MPF) to support long-term pit manufacturing.

The Readiness Campaign program (Program Goal 01.33.00.00) contributes to this goal by developing or reestablishing new manufacturing processes and technologies for qualifying weapon components for reuse.

The Readiness in Technical Base and Facilities (Operations and Maintenance) program (Program Goal 01.34.00.00) contributes to this goal by operating and maintaining National Nuclear Security Administration facilities in a safe, secure, efficient, and reliable condition so that they are operationally ready to execute nuclear weapons stockpile stewardship tasks on-time as identified by the Directed Stockpile Work and Campaign programs. This includes contractor facility operating costs (e.g. utilities, equipment, facility personnel, training, and salaries); facility and equipment maintenance costs (staff, tools, and replacement parts); other project costs; environmental, safety, and health costs; the capability to recover and recycle plutonium, highly-enriched uranium, and tritium to support a safe and reliable nuclear stockpile; and specialized storage containers sufficient to support the requirements of the nuclear weapons stockpile.

The Readiness in Technical Base and Facilities (Construction) program (Program Goal 01.35.00.00) contributes to this goal by funding new and ongoing line-item construction projects which support the nuclear weapons complex, but are not directly attributable to Directed Stockpile Work (DSW) or a specific campaign. RTBF construction focuses on state-of-the-art facilities and infrastructure and advanced scientific and technical tools, within the approved baseline cost and schedule, to ensure a reliable nuclear weapons stockpile.

The Secure Transportation Asset program (Program Goal 01.36.00.00) contributes to this goal by providing a capability for the safe and secure transport of nuclear weapons, components, and materials that will meet projected NNSA, Department of Energy, and other customer requirements.

The Nuclear Weapons Incident Response program (Program Goal 01.37.00.00) contributes to this goal by serving as the Department of Energy and the National Nuclear Security Administration primary point of contact for all emergency management activities, developing and issuing all policy, procedures, guidance and training, and overseeing implementation of the Department's Emergency Management System. The program administers and directs the emergency response programs that provide the capability to respond to and mitigate a nuclear or radiological incident or emergency within the U.S. and abroad.

The Facilities Infrastructure and Recapitalization Program (FIRP) (Program Goal 01.38.00.00) contributes to this goal by restoring and revitalizing the physical infrastructure of the nuclear weapons complex – the third leg of the new Triad as identified in the December 2001 *Nuclear Posture Review and released by the Administration in January 2002*. The program applies new direct appropriations to address an integrated, prioritized series of repair and infrastructure projects focusing on deferred maintenance that will significantly increase the operational efficiency and effectiveness of the NNSA weapons complex sites.

The Safeguards and Security program (Program Goal 01.39.00.00) contributes to this goal by protecting NNSA personnel, facilities, nuclear weapons, and information from terrorists and other post September 11 threats in a cost-effective manner.

Annual Performance Results and Targets

Annual performance results and targets for Weapons Activities work are included in the sub-program sections of this budget where it is more meaningful to the reader.

Means and Strategies

The Weapons Activities program will use various means and strategies to achieve its program goals. However, various external factors may impact the ability to achieve these goals. The program also performs collaborative activities to help meet its goals.

The NNSA will conduct a wide range of tests and experimental activities to assess the continuing safety and reliability of the Nation's nuclear weapons stockpile. Overall technical reviews by the weapons laboratories of the stockpile will encompass laboratory and flight tests of materials and components, and surveillance tests. Computer simulations of weapons will be used in these assessments. Weapons analyses will utilize data archived from past underground nuclear tests, along with laboratory radiation and nuclear burn as well as dynamic experiments with plutonium and other materials. Working through the weapon production plants and the laboratories, NNSA will make deliveries of limited life and other weapon components for nuclear weapons stockpile management and refurbishment, according to schedules developed jointly by the NNSA and the Department of Defense (DoD). Dismantlement activities are also carried out in support of this objective. Activities will be conducted with DoD, ranging from training in nuclear weapons field maintenance to partnerships in research supporting non-nuclear munitions.

The NNSA will continue with the campaigns approach for activities that develop critical capabilities needed to achieve weapons stockpile certification. The campaigns are focused efforts with specific objectives and milestones, planned and executed by integrated teams from the laboratories, Nevada Test Site (NTS) and production plants. The six campaign sub-elements are Science, Engineering, Inertial

Confinement Fusion Ignition and High Yield, Advanced Simulation and Computing, Pit Manufacturing and Certification, and Readiness.

The NNSA will continue to oversee and maintain the physical plant infrastructure at government-owned, contractor-operated laboratories, production plants, and test site, according to applicable statutes, laws, agreements and standards. NNSA is developing detailed facility operation plans to ensure that specific requirements for readiness are maintained. NNSA will implement the recommendation of the Nuclear Posture Review to transition to an enhanced test readiness posture by improving infrastructure, hiring and training personnel, and revising and exercising relevant plans and safety documentation. As proposed by NNSA and approved by the Nuclear Weapons Council, and supported by the FY 2004 National Defense Authorization Act, the goal is to reach an eighteen month underground nuclear test readiness posture by the end of FY 2005. The NNSA will continue to institutionalize responsible and accountable corporate facilities management processes and incorporate best practices from industry and other organizations. This includes implementation of a planning process that results in the submission of Ten Year Comprehensive Site Plans (TYCSPs) that establish the foundation for the strategic planning of the facilities and infrastructure of the complex. The NNSA's complex is a government-owned, contractor-operated enterprise. The NNSA works proactively with its contractors, external regulators, and host communities to assure that facilities and operations are in compliance with all applicable statutes and agreements to preclude any adverse impact to the environment, safety and health of workers and the public and to address emergency management issues while minimizing unscheduled disruption to program activities that could affect performance.

The NNSA will provide for enhancements to the Secure Transportation Asset to meet increased operating and security standards, and will maintain nuclear emergency operations assets. NNSA will identify the workforce skills necessary to meet long-term stockpile stewardship requirements and will develop staffing plans to attract and retain staff.

The Administration's reviews to create a new vision for the role of the Nation's military in the 21st century have the potential to affect performance goals in FY2005 and beyond.

Some activities will be conducted with DoD, ranging from training in nuclear weapons field maintenance to partnerships in research supporting non-nuclear munitions. Stockpile Stewardship activities are synergistic with Work for Others activities, sponsored principally by the DoD.

There are a number of collaborations with universities and colleges, mainly associated with the strategic computing activities, the science campaign and inertial confinement fusion research program. Also, a limited number of technology partnership efforts with industry may be continued for FY 2005.

Validation and Verification

To validate and verify program performance, NNSA will conduct various internal and external reviews and audits. NNSA's programmatic activities are subject to continuing review by the Congress, the General Accounting Office, the Department's Inspector General, the National Security Council, the Defense Nuclear Facilities Safety Board, the Department's Office of Engineering and Construction Management, and the Department's Office of Independent Oversight and Performance Assurance. Each year numerous external independent reviews are conducted of selected projects. Additionally, NNSA Headquarters senior management and Field managers

conduct frequent, in-depth reviews of cost, schedule, and scope to ensure projects are on-track and within budget.

NNSA has established a comprehensive validation and verification process as part of its Planning, Programming, Budgeting and Evaluation (PPBE) system. Long-term performance goals are established/validated during the Planning Phase and linked in a performance cascade to annual targets and detailed technical milestones. During the Programming Phase, budget and resources trade-offs and decisions are evaluated based on the impact to annual and long-term performance measures. These NNSA decisions are documented and used to develop the budget requests during the Budgeting Phase. Program and financial performance for each measure is monitored and progress verified during the Execution and Evaluation Phase.

NNSA validation and verification activities during the PPBE Execution and Evaluation phase include a set of tiered performance reviews to examine everything from detailed technical progress to program management controls to corporate performance against long-term goals. This set of reviews includes: (1) the Office of Management and Budget's (OMB) Program Assessment Rating Tool (PART); (2) NNSA Administrator Program Reviews; (3) Program Managers Detailed Technical Reviews; (4) quarterly reporting of progress through the Department's JOULE performance tracking system; and (5) the NNSA Administrator's Annual Performance Report.

NNSA is using the OMB PART process to perform annual internal self-assessments of the management strengths and weaknesses of each NNSA program. Among other things, the PART process helps NNSA ensure that quality, clarity, and completeness of its performance data and results are in accordance with standards set in the Government Performance and Results Act of 1993 and reinforced by the President's Management Agenda. Independent PART assessments conducted by OMB provide additional recommendations to strengthen NNSA programs.

Each NNSA program is reviewed at least annually by the NNSA Administrator during the NNSA Administrator Reviews. These reviews involve all members of the NNSA management council to ensure progress and recommendations are fully integrated for corporate improvement. The focus of these reviews is to verify and validate that NNSA programs are on track to meet their long-term goals and annual targets.

A second more detailed review of each program is conducted by the program managers. These Program Manager Detailed Technical Reviews are normally held at least quarterly during the year. The focus of these reviews is to verify and validate that NNSA contractors are achieving detailed technical milestones that result in progress towards annual targets and long-term goals. These two reviews work together to ensure that advanced warnings are given to NNSA managers in order for corrective actions to be implemented. NNSA sites are responsible and accountable for accomplishing the verification and validation of their and their sub-contractors performance data and results prior to submission to NNSA Headquarters.

The results of all of these reviews are reported quarterly in the Department's JOULE performance tracking system and annually in the NNSA Administrator's Annual Performance Report. Both documents help to measure the progress NNSA programs are making toward achieving annual targets and long-term goals. These documents are at a summary level to help senior managers verify and validate progress towards NNSA and Departmental commitments listed in the budget.

In addition, the General Accounting Office, Inspector General, National Security Council, Foster Panel, Defense Nuclear Facility Safety Board, and Secretary of Energy Advisory Board provide independent reviews of NNSA programs. Recent Inspector General reports on the Weapons Activities programs include Controls Over Expenditures Within the Office of Transportation Safeguards (OTS) (A03AL036); Review of Kansas City Plant Operations (A03YT026); Audit of Enriched Uranium Operations (A03YT027); Requirements for Tritium (A03SR022); Audit of Nuclear Weapons Incident Response Program (A03DC006); LANL's Nuclear Materials Stabilization Program (A03LA013); Audit of the Utilization of Safeguards and Security Funding (A03NE009); Execution of Routine Operations at the Nevada Test Site (A03LV024); Highly Enriched Uranium Storage Project at the Y-12 National Security Complex (A03YT028); National Nuclear Security Administration's Enhanced Surveillance Program (A03DC009); and Audit of the Department's Emergency Preparedness (A03PT048).

Program Assessment Rating Tool (PART)

The Office of Management and Budget (OMB) conducted PART reviews for two Weapons Activities programs for the FY 2005 budget. NNSA has received ratings of "Moderately Effective" for these two programs (Inertial Confinement Fusion and High Yield Campaign/NIF (ICF) and Readiness in Technical Base and Facilities – Operations (RTBF)). Each of the programs scored strongly in the Purpose, Planning and Management assessments. Lower scores in the "results and accountability" section reflect the need for improvement in performance metrics for the ICF and RTBF programs. Details of the assessments and the recommendations will be discussed in the individual subprogram justifications.

For the FY 2004 budget, OMB rated three Weapons Activities programs: Advanced Simulations and Computing Campaign (ACSI) was rated as "Effective"; one program as "Moderately Effective", Facilities and Infrastructure Recapitalization Program (FIRP); and one program as "Adequate", Safeguards and Security. ACSI and FIRP were given very high marks for program purpose and performance measurement data. FIRP scored Moderately Effective because it was a new program and therefore had not had time to achieve results. The Safeguards and Security program was praised by OMB for being one of the most secure sets of facilities in the country. However, OMB found the program did not clearly define its performance measures (goals and targets), which resulted in the overall rating of Adequate.

All findings from last year's assessments have been addressed. OMB has acknowledged improvement in Safeguards and Security's performance measures, and OMB plans to reassess this program next year.

Funding by General and Program Goal

(dollars in thousands)

[illegible]

Funding for a proportional share of NNSA's annual assessment required to pay for Defense Contract Audit Agency activities is included in this appropriation. The amount estimated for the Weapons Activities is \$1,698,563 for FY 2004 and \$1,795,283 for FY 2005, to be paid from program funding.

Funding for a proportional share of the NNSA assessment for conducting External Independent Reviews on pending construction projects is included in this appropriation. The amount estimated for Weapons Activities is \$686,000, to be paid from program funding.